

NORTH PACIFIC OCEAN, MARCH 1940

By WILLIS E. HURD

Atmospheric pressure.—As in February, a low-pressure area of considerable magnitude continued in March to lie over much of the northern part of the ocean. The center of the Aleutian Low had moved eastward to the western part of the Gulf of Alaska where, at Kodiak, the average pressure was 1,002.1 millibars (29.59 inches), which is 3.3 millibars (.10 inch) below the normal of the month. In the Aleutians a low barometer reading of 962 millibars (28.41 inches) occurred at Dutch Harbor on the 2d. The lowest reading of the month, 947.2 millibars (27.97 inches), was reported by the Japanese Steamer *Syoyo Maru*, on the 1st, near 46° N., 168° W. Unusually low pressures for March occurred at Midway Island and Honolulu, where the averages in both instances were 3.4 millibars (.10 inch) below the normals of the month. The average pressure at Midway Island, 1,014.9 millibars (29.97 inches) was next to the lowest for March during the 25-year period 1916–1940. The lowest average was 1,012.9 millibars (29.91 inches), in March 1928.

Anticyclones moved sporadically across middle and northern Pacific waters, but on the average for the month there were only two high-pressure regions, of small extent, one west of California; the other east of China.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, 1940, at selected stations

Stations	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Millibars	Millibars	Millibars		Millibars	
Point Barrow ¹	1,022.6	+1.6	1,038	18	993	1
Dutch Harbor	1,003.0	—2.8	1,026	11, 12	962	2
St. Paul	1,009.2	+2.4	1,029	14, 18	974	3
Kodiak	1,002.1	—3.3	1,024	18	977	2, 26
Juneau	1,008.8	—5.1	1,028	18	985	26
Tatoosh Island	1,015.2	+0.6	1,033	17	988	26
San Francisco	1,016.9	—1.1	1,029	1	1,006	30
Mazatlan	1,012.3	—0.9	1,015	18, 31	1,008	8
Honolulu	1,013.9	—3.4	1,020	2	1,007	12
Midway Island	1,014.9	—3.4	1,022	8, 27	1,006	1, 24
Guam	1,012.2	—0.3	1,016	26	1,006	12
Manila	1,012.1	+0.9	1,016	26, 27	1,009	9, 20
Hong Kong	1,014.6	—0.6	1,021	1	1,012	16
Naha	1,016.5	+0.6	1,023	23, 27	1,005	19
Titijima	1,015.1	+0.2	1,025	29	1,003	20
Petropavlovsk	1,006.6	—0.5	1,026	12, 14	988	18

¹ For 20 days.

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observation.

Extratropical cyclones and gales.—Storminess on the North Pacific this month was somewhat spotted. The heaviest gales were reported to the immediate eastward of Japan and in midocean on 6 days. There were several days with fresh to strong gales along the California-Hawaiian routes. Elsewhere gale winds were scattered as to locality.

March opened with a deep cyclone of wide extent over middle waters from Bering Sea to the Tropics. In the 1st a number of ships reported gales, mostly of force 10–11, within the area 32° to 46° N., 163° E. to 157° W., with winds of greatest intensity occurring close to the center of that extensive region. A few minor gales occurred in the storm area on the 2d. Thereafter no high winds were reported from the Pacific until the 10th, when a cyclone of

considerable severity appeared close to the eastward of central Japan. On the 10th and 11th, near latitude 35° N., longitudes 146° to 149° E., two ships reported west to northwest winds of force 11, lowest barometer 989.2 millibars (29.21 inches), on the 10th. Lesser gales (force 8–9) continued in the vicinity on the 12th, as the cyclone decreased in energy.

A storm of similar local intensity occurred in the same region during the night of the 22d–23d. At this time the Japanese Steamer *Norway Maru*, east-bound from Kobe, experienced westerly gales of force 11, lowest barometer 982.3 millibars (29.01 inches), near 37° N., 145° E. In the Far Eastern region the only further high winds reported were of force 8 to 9, on the 24th and 28th, in connection with moderate cyclones northeast of the Ogasawara (Bonin) Islands.

In the middle northern waters only a few gales were reported subsequently to the 2d. Among these, specific mention may be made of the stormy weather encountered by the American Steamer *Collingsworth*. The ship entered the gale region, with force 8 winds, on the 16th, near 46° N., 166° E. Late on the night of the 17th the gale had risen to force 11, from east-southeast, near 48° N., 173° E., accompanied by squalls of rain and snow. During the forenoon and early afternoon of the 18th, near 48° N., 174° E., the ship steamed slowly into a southeast hurricane, lowest barometer 989.5 millibars (29.22 inches), with a heavy rain and snow. After nightfall the wind rapidly moderated on shipboard. In the southernmost extension of the area affected by this cyclone on the 18th, near 24° N., 154° W., the American Steamer *Makiki* had a westerly gale of force 9, with only slightly depressed barometer. Elsewhere in the great cyclone, few gales were reported.

From the 9th to the 14th a slow-moving cyclone lay to the north and northeastward of the Hawaiian Islands, where it caused rough weather to shipping between about 30° and 40° north latitude, and about 160° and 130° west longitude. The strongest gales noted were of force 10, occurring on the 10th and 12th, near 36° N., 153° to 156° W. A moderately low barometer of 992.5 millibars (29.30 inches) was read on the American Steamer *Mapele*, near 34° N., 144° W., on the 13th.

Between California and the Hawaiian Islands further gales, of force 8 to 9, occurred on the 26th and 28th. Farther northward, on the 23d, near 44° N. 143° W., the American Steamer *Michigan* had a low barometer of 974.3 millibars (28.77 inches), with light winds, followed to the eastward on the 24th by a southeast gale of force 10 and rising barometer.

Close along the American coast, southerly gales of force 8 occurred on the 1st near the entrance to the Straits of Juan de Fuca, and on the 29th near the mouth of the Columbia River.

Tehuantepecers.—Strong northerly winds occurred in the Gulf of Tehuantepec, as follows: Of force 7 on the 31st; force 8 on the 14th, and force 9 on the 15th.

Fog.—Fog was observed on 2 days along the western part of the northern routes. Within the region 32° to 44° N., 130° to 164° W., fog occurred on 10 days altogether, scattered as to dates and localities. In coastal waters ships reported fog on 6 days off California; on 2 days off Lower California; and on 1 day each in the Gulf of Tehuantepec and off Costa Rica.